HAVE LONG SOUGHT MASTERY OF AIR

Ambitious Minds Would Control Only Element That Has Defied Man

Now It Is Thought That the Aeroplane Devised by Wright Brothers May at Least Point the Way to Success---Could Laugh at Vessels of War.

NEW YORK.—Those reticent and intensely absorbed westerners, the Wright brothers of Dayton, O., appear to have at last conquered the elements which have so long baffled the ingenuity of man, and aerial navigation, so long regarded as a fascinating absurdity, now seems to be very much of a practical reality, says a writer in the New York Times.

Aside from the triumph of the long and apparently easily controlled flight, the most important item contained in the news dispatches from Mantou, N. C., where the brothers have been conducting their experiments, is the statement that the aeroplane not only carried both men, but carried them in a sitting position. The earlier aeroplane of these inventors carried but one aviator, and it was necessary for him to be prone upon his stomach.

The significance of the statement lies in the apparent fact that the inventors have at last succeeded in overcoming the real problem of mechanical flight—the problem of equilibrium. Aeroplanes that would support their operators have previously been tested. Engines of sufficient lightness to propel them through the air at a sufficient speed and to carry their own weight and that of the operators have also been successfully tried. There have been plenty of aeroplanes that would fly in still air. The one needful, essential, and undiscovered thing was an airship that would not capsize when the wind was blowing.

Writing in a recent issue of McClure's Magazine, George Kibbe Turner quotes the Wright brothers as asserting that no one who had not navigated the air can appreciate the real difficulty of mechanical flight—that the great problem—the problem of equilibrium—never occurs to any one who has not actually tried flying. Thus, the real question of the flying machine is how to keep it from turning over.

Air in Constant Turmoil.

"The chief trouble," the brothers explained, "is the turmoil of the air. The common impression is that the atmosphere runs in comparatively regular currents which we call winds. No one who has not been thrown about on a gliding aeroplane—rising or falling ten, 20 or even 30 feet in a few seconds—can understand how utterly wrong this idea is. The air along the surface of the earth, as a matter of fact, is continually churning. It is thrown upward from every irregularity, like sea breakers on a coast line; every hill and tree and building sends up a wave or slanting current. And it moves not directly back and forth upon its coast line, like the sea, but in whirling rotary masses. Some of these rise up hundreds of yards. In a fairly strong wind the air near the earth is more disturbed than the whirlpools of Niagara.

"The problem of mechanical flight is how to balance in this moving fluid which supports the flying machine; or, technically speaking, how to make the center of gravity coincide with the center of air-pressure. The wind often veers several times a second, quicker than thought, and the center of pressure changes with it. It is as difficult to follow this center of pressure as to keep your finger on the flickering blot of light from a prism swinging in the sun.

"It has been the common aim of experimenters with the aeroplane to solve the problem of equilibrium by some automatic system of balancing. We believe that the control should be left to the operator. The sense of equilibrium is very delicate and certain. If you lie upon a bed three-quarters of an inch out of true, you know it at once. And this sense of equilibrium is just as reliable a mile above the earth as it is on it.

"The management of our aeroplane like that of the bicycle, is based upon the sense of equilibrium of the operator. The mechanism for preserving the balance of the machine consists of levers operated by simple uniform movements which readjust the flying surfaces of the machine to the air. The movement of these levers very soon becomes automatic with the aviator, as does the balancing of a bicycle rider, and simpler to operate than a bicycle. In fact, the aeroplane is easier to learn. In all our experiments with gliding and flying machines, we have not even sprained a limb; we have scarcely scratched our flesh."

Fatalities Among Inventors.

But if these two experimenters have had immunity from mishap their predecessors have not. Among the first to undertake the task of demonstrating that a mechanical flying machine is possible was Otto Lilienthal, a German mechanical engineer. He made a study of the flight of birds and eventually concluded that very little was known of the laws which govern the flight of the feathered tribe. He began experimenting in 1891, using wings constructed like those of soaring birds. Equipped with these, he sailed down hill sides into valleys. After a series of more than 2,000 flights one of his wings gave way one day and in his tumble to earth he dislocated his spine and died the following day.

That was in 1896. Three years later an Englishman, Percy S. Pilcher, began experimenting along the same line. He had essayed only a few flights when one of his wings broke and he sustained injuries which caused his death a few days later.

On this side of the Atlantic, Prof. S. P. Langley conducted some notable experiments, fashioning in 1896 a small, steam-driven aeroplane which made a flight of three-quarters of a mile. In the same year Chanute of Chicago constructed a gliding machine which attracted some attention. Four years later the Wright brothers, two young bicycle makers of Dayton, began experimenting.

It was not long before their efforts began to attract attention. But they sedulously avoided notoriety, kept their own counsel, and devoted themselves to the task of solving the problem of mechanical flight. Mr. Turner, however, gained their confidence, and thus describes them: "Two lean, quiet men in a dingy, commonplace little brick bicycle shop; pleasant, unassuming, most approachable, but shy and silent under the oppression of the greatest secret of the time. Orville, of the more social and conversational temperament, did the greater share of the talking—an amiable, kindly-faced man of 35. Wilbur—prematurely bald, about 40, with the watchful eyes, marked facial lines, and dry, brief speech of a naturally reticent man."

Their New Method.

To quote his account of what the brothers told him just prior to their going abroad last year for the demonstration of their machines before foreign war departments:

"We had worked out a new method of practice with gliding machines," they explained. "Lilienthal and Chanute had obtained their experience in flying with the operator's launching himself from a hill and gliding down on to lower land. This involved carrying back their apparatus, after a short flight, to the top of the hill again. Because of the difficulties of this awkward method, although Lilienthal had made over 2,000 flights, we calculated that in all his five years of experiment he could not have been actually practicing flying more than five hours—far too short for the ordinary man to learn to ride a bicycle. It was our plan to follow the example of soaring birds, and find a place where we could be supported by strong rising winds.

"A bird is really an aeroplane. The portions of its wings near the body are used as planes of support, while the more flexible parts outside, when flapped, act as propellers. Some of the soaring birds are not much more than animated sailing machines. A buzzard can be safely kept in an open pen 30 feet across and ten feet high. He cannot fly out of it. In fact, we know from observation made by ourselves that he cannot fly for any distance up a grade of one to six.

"Yet these birds sailing through the air are among the commonest sights through a great section of the country. Every one who has been outdoors has seen a buzzard or hawk soaring; every one who has been at sea has seen the gulls sailing after a steamship for hundreds of miles with scarcely a movement of the wings. All of these birds are doing the same thing—they are balancing on rising currents of air. The buzzards and hawks find the currents blowing upward off the land; the gulls that follow the steamers from New York to Florida are merely sliding down hill a thousand miles on rising currents in the wake of the steamer in the atmosphere, and on the hot air rising from her smokestacks."

Think Great Speed Possible.

The brothers believe that the eventual speed of the aeroplane will be easily 60 miles an hour, and may be forced up to 100 miles. "Our experiments have shown," they said, "that a flier designed to carry an aggregate of 745 pounds at 20 miles an hour would require only eight horsepower, and at 30 miles an hour 12 horsepower. At 60 miles 24 horsepower would be needed, and at 120 miles 60 or 75 horsepower. It is clear that there is a certain point of speed beyond which the air resistance makes it impossible to go. Just what that is experiment will determine. Every year gas engines are being made lighter—a fact which will increase the surplus carrying power of the machine available for fuel and operator and heavier construction, but at present 60 miles an hour can be counted on for the flying machine. This, of course, means speed through the air.

"The aeroplane running 60 miles an hour will have surplus lifting power enough to carry fuel for long journeys. Our 1907 machine will carry gasoline enough to fly 500 miles at a rate of some 50 miles an hour. We can, and possibly soon will, make a one-man machine carrying gasoline enough to go 1,000 miles at 40 miles an hour. Moreover, any machine made to move at speeds up to 60 miles an hour can be operated economically at a cost of not much over one cent a mile for gasoline.

"There is no question that a man can make a lighter and more efficient wing than a bird's. A cloth surface, for instance, can be produced offering less surface friction than feathers. The reason for this fact is that a bird's wing is really a compromise. It is not made for flying only—it must be folded up and got out of the way when the bird is on its feet, and efficiency in flying must be sacrificed to permit this. The wings of aeroplanes will vary in size according to speed. A slow machine will require a large wing, but the faster the speed the less will be the supporting surface necessary, and wings for high speeds will naturally be very small. Not only will less support be needed, but the size must be reduced to reduce the friction of the air."

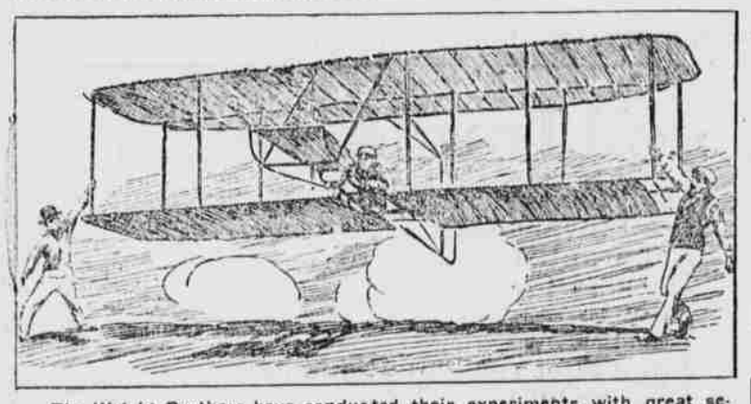
Fearful Only of Capsize.

Although one of the brothers had an ugly fall only a few days ago, they both maintain that the only danger to be apprehended from an aeroplane is the danger of a capsize. A breakdown, or a sudden stopping of the engine, they say—and they certainly should know—does not entail disaster, as on the first thought it might appear. Their explanation is that while the aeroplane is supported in the air through its own motion through it, yet gravity furnishes all the energy that is needed to get safely to the ground. When the power is shut off it merely scales through the air to its landing. Theoretically, it is safer at a mile above the earth than at 200 feet, because it has a wider choice of places in which to land; you can choose your landing from 256 square miles from a mile above the surface if descending one in sixteen. "As a matter of fact," they said, "we always shut off the power when we start to alight, and come down by the force of gravity. We reach the ground at so slight an angle and so lightly that it is impossible for the operator to tell by his own sensation within several yards of where the ground was first actually touched.

"We feel that it is absolutely essential for us to keep our method of control a secret. We could patent many points in the machine, and it is possible that we could make a success of the invention commercially. We have been approached by many promoters on the matter. But we believe that our best market is to sell the machine to some government for use in war. To do this it is necessary for us to keep its construction an absolute secret."

To the same writer the brothers made the interesting statement that they did not expect the aeroplane ever to displace the railroad or the steamboat. They predict that its chief value will be in war time, when it may be employed for dropping explosives upon an enemy or for reconnoitering purposes. In this connection may be added the fact that the navy department has planned an extensive series of experiments with dirigibles, the purpose being to discover their availability for war usage. Those who advocate the employment of these machines point out the fact that flying machines sailing over a fleet are immune from any attack save that of small arm fire, and that they could attain a height so great as to be out of range from these smaller weapons. There is no type of larger gun now carried on shipboard that is capable of such extreme elevation. Of course it would be easily possible to construct a gun mount that would permit of high angle, or even vertical fire, but the question is asked how would you be able to hit one of these small targets sailing so high in air?

When firing at a floating target any error of sighting can be detected by the splash of the shell. But how is a gun-pointer to tell where his shells are going when he is firing upward into the air?



The Wright Brothers have conducted their experiments with great secrecy. The above illustrations give, however, an excellent idea of their aeroplane. They are from photographs taken from a distance for McClure's Magazine. The upper picture shows the glider in motion. The lower picture shows the method of starting.

No Danger.

"Whatever you do, dear," wrote the ardent lover, "don't show my letters to you to anyone."

"Have no fear, dearest," came the reply. "I'm just as much ashamed of them as you are."

And, with that, the engagement became a matter of history.—Judge.

These New Coiffures.

"What a queer ornament Miss Snuffles wears in her hair!" said Mrs. Trulywed. "Can you see what it is?"

"Yes—that's not an ornament. It's the price tag," answered Miss Belle Tinkly.—Cleveland Leader.

NO SHELF FOR HIM

PRESIDENT ROOSEVELT'S HUNTING TRIP DOES NOT MEAN FINAL RETIREMENT.

THIRD TERMERS WILL NOT STAY DOWN

No Position in Which He May Serve His Country Will Be Considered Below His Dignity When He Returns to Public Life—Hopes for Many Years of Activity.

Washington, June 7.—President Roosevelt's announcement Friday that immediately after his retirement from the presidency he would go on a two years' hunting trip in British East Africa with his son Kermit is in the nature of a reply to a persistent aggregation of third term agitators who have been bombarding him with telegrams demanding his acceptance of the Republican nomination for the presidency if it is tendered. These dispatches may and may not have been inspired from the same source, but every indication points to the fact that they were forwarded to the White house as part of a concerted movement.

In the meanwhile, the third term boomers who persist in believing that the president doesn't know his own mind have again become active and are engaged in a desperate attempt to arouse public sentiment in favor of a third term on the eve of the Chicago convention. The president cannot continue to publicly repeat the statement that under no circumstances will he be a candidate for the presidency, although he tells callers as much almost every day.

But his plans for the future are absolutely determined upon and he will not be swerved from his programme.

That the president does not intend permanently to retire from active participation in American politics is just as well settled as that he will not permit himself to be made a candidate for the presidency in 1908. He is too young, too vigorous and there is too much for him to do for him to place himself on a political shelf.

Two Injured When an Engine Jumped.

Kansas City, June 7.—A Wabash passenger locomotive was derailed under the west approach of the intercity viaduct at 8:30 o'clock Saturday morning and two laborers who had been working on the track at that point were injured. An angle bar flew off and struck Seag George on one shoulder, and in the scramble to get out of the way Mike Carbone sprained an ankle. Trains were delayed only a few minutes.

Former Kansas City Man.

New York, June 7.—The alumnae and students of the Dewitt Clinton High school formed a committee last night to get subscriptions for a memorial to John T. Buchanan, the principal from 1897 until his recent death. The memorial is to take the form of a portrait by a reputable artist, an appropriate frame and a small tablet bearing the dates of Dr. Buchanan's principalship. Albert I. Calaio is now acting principal.

The Week's Business Failures.

New York, June 7.—Business failures for the week ended June 4 number 225 in the United States, the smallest reported for any week since last October, and compared with 263 last week and 155 in the like week of 1907. Business failures for the week ended June 4 number 32 in Canada against 31 last week and 18 in the like week last year.

Flood in Oklahoma.

Enid, Ok., June 7.—Following an exceedingly heavy rain Saturday a disastrous flood struck Enid about daybreak. Water stood 12 feet deep on the pavement on Main street within two blocks of the business center. Boggy creek, usually 20 feet wide, spread out to 2,000 feet in many places.

Mrs. Gerling May Recover.

St. Louis, June 7.—Mrs. Elizabeth Gerling, whose throat was slashed Thursday night by a man who hid beneath her bed in her home at 2855 Osage street, has an excellent chance for recovery, for unless infection sets in she will be able to leave the hospital in a few days.

More Digging in LaPorte.

LaPorte, Ind., June 6.—Sheriff Smutzer has resumed digging on the Gunness farm. He will try to learn if there is any foundation for that part of the Truelson confession which deals with the burial of Mae O'Reilly and Frank Redinger near the railroad track.

Six Dead From Baseball.

Cincinnati, June 7.—A blow on the cheek from a batted ball resulted in the death of George McGleason, aged 13, of Latonia, Ky., a suburb. He is the sixth to die of baseball injuries in this city and suburbs since the season opened.

Meat Shortage in America.

London, June 6.—It is said here that 210,000 pounds of American meat that has been stored in London, Glasgow and Liverpool, has been reshipped by fast steamer to New York to meet the continued shortage of meat in America.

Curious Indian Custom.

The following curious custom is recorded by J. Owen Dorsey in his monograph on the sociology of the Omaha Indians:

"In the spring when the grass comes up there is a council or tribal assembly held to which a feast is given by the head of the Hanga geno. After they decide that planting time has come and at command of the Hanga man a crier is sent through the villages. He wears a robe with hair outside and cries as he goes. 'They do, indeed, say that you will dig the ground! Hallo!' He carries sacred corn, which has been shelled and to each household he gives two or three grains, which are mixed with the seed corn of the household."

After this it is lawful for the people to dig up the soil and plant their crops.

External Evidence.

Little Clarence had the experience for the first time of taking his bath in a cold room with water not at the usual temperature. His mamma left him for a moment, while he looked aghast at the "goose flesh" that appeared.

"Hurry up, mamma," he called. "I'm turning into a chicken."—Harper's Weekly.

A Matter of Time.

It was the day of the ball game, and Willie, the office-boy, approached the head of the firm, and stammered: "If y-you p-p-pl-please, sir—"

"Come, hurry up!" said his employer. "If you have anything to say, say it. Don't take half a day."

"But that's just what I was going to ask you if I could take," said Willie.—Harper's Weekly.

A cranky bachelor says that heaven is probably so called because there are no marriages there.

Usually the man who believes in paying as he goes stays at home.

Nature is sometimes kind. Occasionally a red-headed man gets bald.